

CENTRAL INTELLIGENCE AGENCY  
INFORMATION REPORT

COUNTRY USSR  
SUBJECT Evaluation of Soviet Medical Book  
"On the Roads of Science"  
DATE DISTR. 8, SEP 53  
NO. OF PAGES 8  
50X1  
PLACE ACQUIRED [redacted] 50X1  
NO. OF ENCLS. (LISTED BELOW)  
DATE ACQUIRED [redacted]  
SUPPLEMENT TO REPORT NO.  
DATE (OF INFO) [redacted] 50X1

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES, WITHIN THE MEANING OF TITLE 18, SECTIONS 793 AND 794, OF THE U.S. CODE, AS AMENDED. ITS TRANSMISSION OR REVELATION OF ITS CONTENTS TO OR RECEIPT BY AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. THE REPRODUCTION OF THIS FORM IS PROHIBITED.

THIS IS UNEVALUATED INFORMATION

50X1 [redacted]

50X1 [redacted] Soviet medical  
50X1 book [redacted] PO DOROGAM NAUKI (subtitle, RASSKAZY O  
MEDITSINE) By L S Fridland; Publisher: Gosudarstvennoye Izdatel'stvo  
"Sovetskaya Nauka" Moscow 1951 (308 pp) 7

1. This book, the title of which means "On the Roads of Science" (subtitle, "Stories of Medicine"), is not, strictly speaking, a medical textbook. It was written presumably for nonmedical intellectuals and is somewhat similar in its approach and in the kind of audience for whom it was written to some of the works of Paul deKruif. [redacted] Fridland, the author, [redacted] At the end of the New Economic Policy (NEP) period in the USSR in 1927 or 1928, [redacted] published several nonscientific books dealing with such problems as venereal disease, sexual aberrations, etc. These were best sellers in the USSR. [redacted] they were written in a very lurid style and found many readers partly because of their subjects and partly because of their sensational style. Some of these books actually were ultimately banned in the USSR. [redacted] Of all the Soviet scientific books [redacted] this one is perhaps the most servile as far as subscription to the Communist line is concerned. In spite of this, however, the book deserves some attention because it covers a wide variety of interesting medical topics and purports to contain discussions of some of the most important Soviet contributions to these fields. It is not possible [redacted] to state categorically which of the contributions discussed are in fact true. It seems [redacted] however, that although these Soviet scientific achievements are probably exaggerated by the author, there is, nevertheless, probably some core of basic truth in all of them.
2. The preface to this book starts out, as might be expected, with a quotation from Stalin and reads like an editorial from Pravda. It is not necessary [redacted]

50X1

CLASSIFICATION CONFIDENTIAL/SECURITY INFORMATION									
State	x	Navy	x	DISTRIBUTION					
Army	x	Air	x						

50X1

50X1

[ ] to describe the preface in detail but the general tone of it is that every-thing is right in the USSR and wrong elsewhere. The author, of course, strongly supports the present scientific Communist line and describes Pavlov's neurism as a kind of "Soviet Darwinism."

3. Chapter One: "Ampule of Life"

This chapter heading is typical of the popular style in which this book is written. The subject under discussion here is blood transfusion and the au-  
thor starts out with a historical survey of the subject which even mentions  
the internationally-recognized work of Landsteiner, whose historic publica-  
tion in this field appeared in 1901. It is apparently still possible in the  
USSR to quote Western researchers whose work dates from before the Russian  
Revolution. The author describes the technique of blood transfusion and men-  
tions the outstanding work of the Soviet surgeon Vladimir Nikolayevich Shamov,  
who started using blood transfusions in Moscow and Leningrad in 1919. Shamov  
proposed the use of many stabilizers for blood preservation. In 1930 he and  
his associates proposed using for transfusions blood from cadavers. This  
method of transfusion of course has some advantages. A large amount of blood,  
for example, can be obtained from a single donor and can be used without any  
stabilizers. According to Fridland, 2,050 blood transfusions from cadavers  
were performed in the USSR up until 1940 and "many thousands since." Fridland  
also briefly discusses plasma transfusions and methods for the preparation of  
dry plasma. [ ] The author  
at this point inserts a little propaganda by stating that blood donors in the  
US are "poor exploited people who give blood for money although they them-  
selves need transfusions because of the bad condition of their health." He  
further states that in France and Italy people are persuaded to give blood by  
promises of religious salvation. Of possible interest is the following table  
contained in this chapter:

50X1

Date	No of Transfusions in the USSR	Percentage of Transfusions Using Preserved Blood
1932	2,433	---
1935	22,160	26%
1938	100,143	70%
1940	226,000	90%

No figures later than 1940 are furnished. At the close of this chapter the au-  
thor briefly discusses Bogomolets' "colloidoclastic shock" theory which ex-  
plains death resulting from blood transfusions. According to the theory,  
death is caused by intracellular storms occurring after transfusion. This  
theory has been regarded as being of the arm-chair variety but found [ ]  
[ ] many adherents in the US.

50X1

50X1

4. Chapter Two: "The Fight with Old Age"

The author starts this chapter with some speculation as to what the actual hu-  
man life span is and he believes that it is somewhere between 120 and 150  
years. He contrasts this figure with figures on the normal life span in vari-  
ous parts of the world. The figures he gives are interesting: US, 41 years;  
Sweden, 43 years; Germany, 34 years. He furnishes no figures on the USSR.  
He attributes the very low life span in capitalist countries to "bourgeois  
science which, existing as it does on the gifts of capitalism, does not try  
to find ways to prolong human life but on the contrary considers such measures  
harmful." To support this theory he quotes the famous German professor, Hanse-  
mann, who allegedly in a speech given in 1910 said that measures which pro-  
longed human life were harmful because disease and war are factors for select-  
ing strong individuals. He also quotes from Way to Salvation by William Vogt\* [sic]  
(New York, 1948), who Fridland says is Director of the Institute for the Pro-  
tection of Nature [sic] of the Pan-American Union. According to Fridland,

[\*Probably Road to Survival - William Vogt N.Y. 1948]

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

- 3 -

50X1 Frost says that disease, famine, war, and death are ways to salvation because  
 50X1 they lead to the diminution of the population. Still another quote is from a  
 50X1 1948 report of "a US research association concerned with labor" which, accord-  
 50X1 ing to the author, describes the horrors of life in Atlanta, Georgia; Jeffer-  
 50X1 son, Alabama; and Detroit, Michigan. The report allegedly states that in  
 50X1 1948, 275 thousand people died from starvation in the US and 468 thousand died  
 50X1 from lack of medical attention. The author furnishes many other such quota-  
 50X1 tions [redacted] he  
 50X1 also mentions [redacted] work with a group of very old people in the northern Caucasus.  
 50X1 [redacted] He gives a routine survey of the prob-  
 50X1 lems of old age, but this survey is very primitive. He cites the work of Il'ya  
 50X1 Il'yich Mechnikov and also of Sergei Voronov. On page 69 he describes the fa-  
 50X1 mous although controversial anti-reticular cytotoxic serum of Bogomolets. It  
 50X1 was very interesting [redacted] that he describes this serum as a very interesting  
 50X1 achievement but one which, nevertheless, has been examined and re-examined so  
 50X1 much that now it is difficult to assess its true value. This is significant  
 50X1 [redacted] in the light of the great popularity of Bogomolets in the 1940's, when  
 50X1 it was virtually treason to disagree with any of his theories. Fridland also  
 50X1 describes in this chapter the work of Mariya Kapitonovna Petrova, one of Pav-  
 50X1 lov's assistants who for many years performed experiments on two groups of  
 50X1 dogs. One group was continually stimulated or overstimulated and after only  
 50X1 two or three years of this treatment exhibited all the symptoms of old age.  
 50X1 The second group was treated in the opposite manner, i.e., no overstrain or  
 50X1 overstimulation, and remained in good physical condition for a very long time.  
 50X1 Petrova's experiments, although resulting in the expected conclusions, were,  
 50X1 nevertheless, good sound scientific work. The author contrasts them to the  
 50X1 concepts of Bogomolets, which, he says, are not supported by the theory of  
 50X1 neurism and should be regarded as only a possible solution to the problem of  
 50X1 old age.

#### 5. Chapter Three: "Deceived Death"

50X1 This chapter contains a very dramatic description of a number of cases of so-  
 50X1 called "clinical death," and among other things describes the work of Prof  
 50X1 Vladimir Aleksandrovich Negovskiy [redacted] According to  
 50X1 the author, Negovskiy after 300 experiments on dogs in which clinical death  
 50X1 had been artificially induced, introduced a new method for the revitalization  
 50X1 of humans. According to the author, Negovskiy revitalized 54 patients (sol-  
 50X1 diers in the Red Army) during World War II. His recommended procedure is as  
 50X1 follows:

a. Immediately after death begin artificial respiration with  
 the help of special apparatus similar to a hand-operated iron lung  
 which works through a tube introduced into the trachea.

b. Start the intra-arterial transfusion of 300 cc's of blood  
 plus adrenalin under high pressure.

c. Start an intravenous transfusion of 700 cc's of blood plus  
 hydrogen peroxide plus 100 per cent glucose.

According to the author, this procedure was successful in the 54 cases men-  
 tioned above. It is most effective when performed immediately after the heart  
 stops and is not effective at all six minutes after death. The arterial trans-  
 fusion recommended was very interesting to me.

#### 6. Chapter Four: "Stimulators of Life"

50X1 This chapter is concerned principally with a discussion of the work of Vladi-  
 50X1 mir Petrovich Filatov, the famous ophthalmologist from Odessa. [redacted]  
 50X1 [redacted]

50X1

CONFIDENTIAL [redacted] SECURITY INFORMATION

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

- 4 -

50X1 [redacted] Filatov started research on the age-old problem of corneal transplants. He discovered that many of the unsuccessful transplants had been of animal corneas and that actually only human corneal tissue could be transplanted. He further decided that the corneal tissue most suitable for transplants was not absolutely fresh and that the best results were obtained with tissue which had been under refrigeration for three to four days. Filatov [redacted] was subjected to a considerable amount of criticism because of this theory; nevertheless, he performed hundreds of corneal transplants with better than 80 per cent success. As a result of his work he evolved a theory which states that all human tissue has special biogene stimulators which are especially energetic when the tissue is placed under unfavorable conditions and further that these stimulators are the last reserves of tissue in its struggle for life. An example of these unfavorable conditions is the refrigeration of corneal tissue. Explainable also by this theory is the post mortem growth of nails and hair. Filatov also believed that corneal transplants could be used not only as replacement treatment but also as curative treatment and that the biogene stimulators in such tissue acted to cure disease. He stated that it was necessary only to transplant a piece of such tissue near the diseased area to cure disease. This procedure has been very helpful in the treatment of various eye conditions.

#### 7. Chapter Five: "Microbes against Microbes"

50X1 This chapter deals with the subject of antibiotics but does not contain anything very interesting to the Western reader. The author claims that in 1892 Dmitriy Osipovich Ivanovskiy discovered viruses. [redacted]

50X1 [redacted] The author discusses Soviet developments in the field and states that in 1942 Zinaida Visserionovna Yermol'yeva found an original method of producing penicillin commercially. In 1942 the USSR had obtained penicillin from the US and hence Miss Yermol'yeva's interest in its production. [redacted] following

50X1 World War II [redacted] one of the leading German scientists in this field that as late as 1944 his laboratory had not been able to devise a method for the production of penicillin, although they had US penicillin ampules and knew in a general way how these had been produced in the US. On page 137 Fridland states that because of the preventive and therapeutic use of penicillin, the percentage of recovery of wounded soldiers in the Red Army is 70 per cent. Other specific topics in this general field discussed by Fridland include the work of the famous Soviet neuro-surgeon Nikola Nilovicii Burdenko, whose fame of course goes back to pre-revolutionary times. During World War II Burdenko developed a new method for the arterial administration of penicillin which was very valuable for the treatment of brain lesions. He started this treatment with an intravenous infusion of 10 per cent sodium chloride and then introduced 10,000 units of penicillin via artery and following this with an additional 40,000 units injected intramuscularly. No statistics on the efficacy of this treatment are given. The author also mentions specific antibiotics developed by the Soviets. One of these is called gramitsidin and is apparently similar to the US tyrothricin and is used only externally because it is too dangerous. The Soviets have another called aspergillin, which the author describes only as "an effective antibiotic" and a third called eritrin, which is apparently effective against diphtheria when used with regular diphtheria serum. On page 162 the author describes work by Dr (fnu) Bosh'yan, another

50X1 man [redacted] who claims to be able to obtain viruses from protein crystals and to produce microbes from these viruses. The author does not go into any detail about Bosh'yan's work but does state that the work must be checked further and that it may turn out to be significant.

#### 8. Chapter Six: "The Fight for Time"

This chapter deals with frostbite and starts with a survey of the clinical picture of various kinds and degrees of frostbite. According to the old-fashioned treatment of this problem, patients should be kept in rather cold

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

- 5 -

rooms and that the affected parts should be rubbed with ice. Following this the temperature should gradually be increased. Also recommended was early amputation, if necessary, to prevent the spread of gangrene. During World War II this classical treatment was changed. Especially valuable, according to the author, in this connection was the work of Semen Semenovich Girgolav, whom I remember very well as an excellent anti-Communist scientist.

Girgolav started his treatment by warming his patients using rather hot air. In cases of gangrene he used necrotomy. According to the author, his results were very favorable because the duration of the problem was lessened and there was less early gangrene and, therefore, fewer amputations.

## 9. Chapter Seven: "The Art of Repair"

This is a discussion of Soviet developments in the field of plastic surgery and a number of interesting techniques are described including the following:

a. On page 186 the author states that Professor (fnu) Khrushchev discovered during World War II that the addition of an emulsion of leukocytes to any wound resulted in quicker recovery. Khrushchev believed that the reason for this was that leukocytes contain special stimulators called trephones.

b. The author also describes the work of Professor (fnu) Bogoraz. He was an orthopedic surgeon from Rostov. Although he lost both his legs at the knees in an accident, he continued to operate. The author describes his treatment of severe hip fractures with extreme dislocation. During World War II he used a special technique called "segmentary osteotomy" which he found very effective. Instead of attempting to reduce a very serious fracture all at one time, Bogoraz actually broke the bones into segments and re-aligned the segments. The author also mentions another of Bogoraz' techniques by which he replaced an injured femur head with an artificial cup made of plexiglass. According to the author, Bogoraz had very great success with this technique.

c. On page 192 the author describes a special technique of the neuro-surgeon (fnu) Anokhin, which was used to treat lesions of nerve trunks. It is sometimes impossible to connect the ends of a severed nerve trunk but Anokhin, according to the author, developed a technique for effecting this repair, using a so-called nerve bridge. This technique amounts to joining the segments using a section of nerve trunk taken from a young cow or bull.

d. The author states that Bogoraz (see above) successfully transplanted a paw from one dog to another with good results, including complete muscular use of the transplanted paw.

e. The author also describes Filatov's method for skin grafts, the so-called "traveling skin" method.

f. Also described is the work of Professor (fnu) Mikhel'son during World War II. According to Fridland, Mikhel'son successfully grafted a section of tongue in the case of a patient who had lost his tongue from a gun-shot wound. He apparently used skin and subcutaneous tissue for this work.

g. Finally in this chapter the author describes the very delicate operation which is used to build an artificial esophagus. This operation, of course, has been performed in many countries.

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

- 6 -

## 10. Chapter Eight: "Heart Seige"

This chapter deals with injuries to the heart and includes at the beginning a historical survey of the field. The author describes the delicate operation called cardiorrhaphy used to suture the heart muscle which formerly had as high a mortality rate as 50 per cent. According to the author, Professor Yustin Yul'anovich Dzhanelidze developed a special technique for this operation which greatly reduced its mortality rate. He used transplants of small amounts of adipose tissue. This technique of Dzhanelidze, incidentally, is based on work he did during World War I. In some cases heart lesions may cause angina pectoris and the author describes Dzhanelidze's treatment of this situation by which he excised callous tissue in the heart and replaced it with adipose tissue. If still alive, [redacted] Dzhanelidze would now [1953] be in his 70's. The author also describes in this chapter various other experiments using an artificial heart developed by Alexis Carrel. [redacted] it indicates that the Soviets are in possession of and are familiar with this device. The author describes the work of the surgeon (fnu) Demikhov who successfully transplanted the heart of one dog to another using the Carrel heart. According to this technique, Demikhov first implanted a second heart in the subject dog and left two hearts in the dog for a time. Later he stopped the dog's original heart. This experiment was performed on "several dozen dogs," some of which lived for eight to ten days following the operation. Although these later died, death was not caused by the transplantation itself but by infection, pleural complications or destruction of nearby tissue. The author also describes the well-known experiments of Brukhonenko and Chechulin, who decapitated a dog and successfully kept the dog's head alive for a considerable period of time. Not only was the head alive but it retained the use of many of its faculties. It opened its eyes and closed them in response to light stimuli and when acid was placed on the lips, the tongue licked it off. The ears also were cocked in response to a whistle.

## 11. Chapter Nine: "When the Brain Sleeps"

This chapter is a history of anesthesia. The most interesting part of this chapter [redacted] is a description of the work of a young scientist named Vsevolod Semenovich Galkin. He continued the famous experiments conducted at the Institut Pasteur by Roux and Bezredka, who of course discovered that anaphylactic shock was not encountered in anesthetized patients. According to the author, Galkin conducted a number of very interesting experiments which [redacted] probably date from after World War II. He discovered that actually no anaphylactic shock developed in an experimental animal when the animal was just sedated with sleeping pills, i.e., not deeply anesthetized. On page 252 the author states that Galkin discovered that there was no ulceration resulting from the application of Lewisite to a sedated animal. Similarly there was no reaction from milk injected intramuscularly. Prior to the development of the electric shock treatment in psychiatric cases, camphor or cardiozal was used to produce cramps. Galkin discovered that such cramps did not develop in deeply sedated animals. Another phenomenon he discovered was that cyanide administered in normally fatal amounts produced no results on a sedated animal. One of the few human applications of Galkin's work that the author describes is the recovery of humans from cicuta (hemlock) poisoning when sedated with cocaine. One of the most interesting studies performed by Galkin had to do with high altitude disease. Using a special pressure chamber he discovered that ten anesthetized dogs were able to live at the sub-stratosphere level and that no high altitude disease developed. This work is described on page 258. Galkin also discovered that anesthesia was helpful in the case of post-transfusion shock in humans caused by their being transfused with incompatible blood.

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

- 7 -

12. Chapter Ten: "On the Eve of Victory"

This chapter is a discussion of cancer. It contains little of interest to the Western reader and most points covered are merely routine.

however, mention the following points:

a. According to the author, Professor (fnu) Shabad found cancerogenic substance in the liver of healthy men, although it was especially prevalent in the liver of a patient suffering from cancer.

b. Professor Aleksandr Dmitriyevich Timofeyevskiy after 20 years' work was able to develop cancer cells which lost their malignancy after many passages through Carrel millieux.

Timofeyevskiy as a very modest and reserved man who was completely apolitical and was interested in nothing but his laboratory.

c. Dillon, a Moscow x-ray specialist, treated cancer with fair success by bombardment of the tumor with x-rays from 35 to 40 different points.

d. The author stressed the importance of early diagnosis in the fight against cancer and prescribed regular checkup examinations of healthy individuals for this purpose. In this connection on page 312 he states that during the years 1944-1946 only 4,000 persons received such checkups in Philadelphia; whereas, during the first six months of 1946 alone, 26,000 people were examined in Leningrad. He also states that in the rich US every patient must pay US\$2 for this examination although many are only receiving 50 cents per week in social security. He further states that the capitalistic regime is the most important single cancer-producing factor.

13. Chapter Eleven: "Further Links"

This is the most scientific chapter in the book and in general is a good treatment of its subject. It deals with the work of Pavlov, or more properly of one of his assistants, Konstantin Mikheylovich Bykov, who is now one of the leading Soviet scientific lights. Bykov's many experiments proved that the visceral organs have not only unconditioned but conditioned reflexes and that their actions may be controlled to some extent by the central nervous system. This work of Bykov was excellent and Fridland, the author, gives a very good description of it. The practical application of Bykov's work is that his theory may be the scientific and physiological basis of psychosomatic medicine. This chapter contains very little anti-capitalistic propaganda with the exception of a statement on page 368 that according to US medical statistics of 1948, one-third of the US population suffers from hypertensive disease and 8 million from mental disease. The author then goes on to contrast this with the wonderful conditions in the USSR.

14. Conclusion: "Different Lines"

This chapter is all propaganda and is merely a discussion of the different conditions encountered in the USSR and the US. To make his point the author even quotes ex-President Truman. He states that Truman "could not help admitting on 5 Jan 48 that the US medical organization is obsolete and cannot keep up with progress in medical science" and further "that medical treatment is too expensive and is not available to many US citizens." A number of other Western individuals are quoted either correctly or incorrectly to support the author's theory.

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION

- 8 -

15. [redacted] unable to say whether or not all the scientific  
50X1 work described in this book has been carried out as the author describes. [redacted]  
50X1 [redacted] believe, however, that certainly the basic material presented is true.  
50X1 Some of the Soviet developments are certainly exaggerated and also certainly  
50X1 some important Soviet advances in medical science have been omitted. [redacted] gen-  
50X1 eral impression from reading the book is that general concepts and theories  
in medicine which have found favor with the Communist regime are obligatory  
for Soviet scientists. [redacted] some  
50X1 of the men who were in great favor [redacted] such as Speranski  
50X1 and Bogomolets, are now definitely out of favor. On this basis perhaps some  
day even Pavlov and Lysenko will pass out of the Soviet scientific picture.  
After all, prior to World War II Pavlov's name was definitely not popular in  
Communist circles.

- end -

CONFIDENTIAL/US OFFICIALS ONLY/SECURITY INFORMATION